



EITEL-McCULLOUGH, INC.
SAN CARLOS, CALIFORNIA

PRELIMINARY DATA

1K125CA

C-BAND
REFLEX KLYSTRON

TYPICAL PERFORMANCE

ELECTRICAL PERFORMANCE

Frequency Range	- -	3.7 to 4.4 Gc
Mechanically Tunable	- -	700 Mc
Power Output	- - -	1.25 W min
Electronic Tuning Range (3 db bandwidth)	- -	25 Mc min
Resonator Voltage	- -	1000 Vdc
Cathode Current	- -	80 mA _{dc}
Repeller Voltage	- -	-400 Vdc
Modulation Sensitivity	- -	250 to 550 Kc/v
Heater Voltage	- -	6.3 V(ac or dc) ± 5%
Heater Current	- -	1.5 A max
Mode	- - - -	2-3/4
VSWR of Load	- - -	1.15:1
Temperature Coefficient	- -	± 75 Kc/°C
Warm-up Time	- -	120 seconds

MAXIMUM RATINGS

Resonator Voltage	- - - -	1200 Vdc
Cathode Current	- - - -	110 mA
Repeller Voltage (negative with respect to the cathode)	- - -	-100 to -750 Vdc

Note: Damage to the tube may occur if the maximum ratings are exceeded.

MECHANICAL

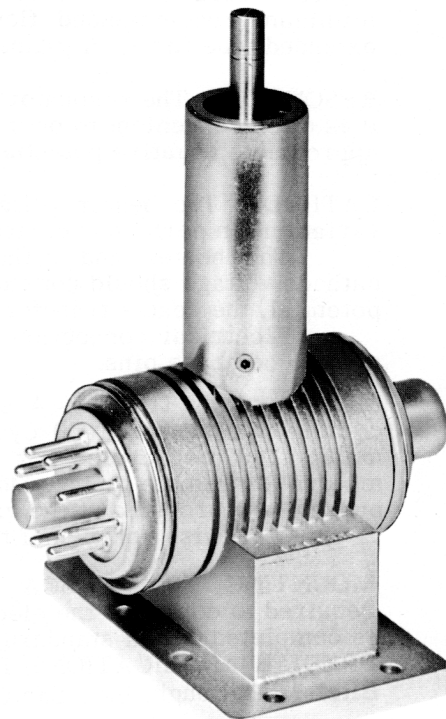
Operating Position	- - - -	any
Electrical Connection	- - - -	Octal Socket
RF Output Coupling	- -	-CMR 187 waveguide flange
Cooling Required	- - - -	10 cfm @ sea level
Net Weight	- - - -	19 ounces
Shipping Weight (approximate)	- -	5 pounds

ENVIRONMENTAL PERFORMANCE

Temperature Range (Ambient)	- -	-25 to +65 C
Altitude	- - - -	10,000 ft. max
Vibration	- - - -	10 G, 40 cps
Shock	- - - -	10 G, 1 ms

OUTLINE DIMENSIONS

Height	- - - -	4.700 max
Width	- - - -	2.797 max
Length	- - - -	3.450 max





APPLICATION NOTES

NOTE: All voltages are referred to the cathode.

COOLING: At sea level, with an ambient temperature of 50° Centigrade, a minimum air-flow rate of 10 CFM, directed over the klystron body, is required to adequately cool the tube when operated at maximum ratings.

For conditions other than the above, the criterion for proper cooling is to maintain the klystron ceramic-to-metal seal temperatures below 175° Centigrade. Cooling in excess of the minimum recommended flow rate will result in longer tube life and more stable operation. If extended tube life is of primary concern, the body temperature should not exceed 100° Centigrade.

RESONATOR: The resonator of the 1K125CA is integral with the body of the tube. For this reason, it is often convenient to operate the resonator at chassis potential, with the repeller and cathode at appropriate negative potentials.

CATHODE: The heater voltage should be maintained within $\pm 5\%$ of the rated value of 6.3 volts if variations in performance are to be minimized and best tube life obtained.

The heater and cathode of the 1K125CA are not internally connected and the heater-to-cathode voltage should not exceed ± 45 volts. When the resonator of this tube is operated at chassis potential, the heater transformer must be insulated for the cathode-to-resonator voltage.

Electrical connection to the cathode of this tube should be completed by utilizing all four of the cathode base pins.

MECHANICAL TUNING: A screw-driven bellows, coupled to a ceramic-slug tuner, allows tuning cycling in excess of 1000 cycles without damage to the vacuum seals. The tuning rate of approximately 100 megacycles per turn and the low tuner starting-torque permits the use of miniature motors for remote tuning. Mechanical stops, capable of withstanding a maximum torque of 10 inch-ounces, are provided at the extremes of the tuning range to prevent damage to the tube.

Clockwise rotation of the tuner-shaft produces an increase in frequency.

MOUNTING: The 1K125CA should be mounted by the output-waveguide flange. An octal socket is required to complete the electrical connections to the heater and cathode. The repeller connection is completed with a standard medium cap connector.

SPECIAL APPLICATIONS: For additional information regarding any specific application, write to Eitel-McCullough, Inc., San Carlos, California. All such requests will be handled confidentially.

